for each call to be processed. Diversity combiner **104** compares the signal quality indicators accompanying the information bits from the two or more cell-site signals. Diversity combiner **104** selects the bits corresponding to the highest quality cell-site on a frame-by-frame basis of the information for output to vocoder **106**.

Vocoder **106** converts the format of the digitized voice signal to standard **64** Kbps PCM telephone format, analog, or any other standard format. The resultant signals are transmitted from vocoder **106** to digital switch **108**. Under the control of system control processor **100**, the call is routed to the PSTN.

Voice signals coming from the PSTN intended for the mobile unit, are provided to digital switch **108** to an appropriate digital vocoder such as vocoder **106** under control of system control processor **100**. Vocoder **106** encodes the input digitized voice signals and provides the resulting information bit stream directly to digital switch **102**. Digital switch **102**, under the control of system control processor **100** directs the encoded data to the cell-site or cell-sites to which the mobile unit is communicating. If the mobile unit is in a handoff mode communicating to multiple cell-sites or in a cell diversity mode, digital switch **102** routes the call to the appropriate cell-sites for transmission by the appropriate cell-site transmitter to the intended recipient mobile unit. However, if the mobile unit is communicating with only a single cell-site or not in a cell diversity mode, the signal is directed only to a single cell-site.

System control processor **100** provides control over digital switches **102** and **106** for routing data to and from the MTSO. System control processor **100** also determines the assignment of calls to the cell-sites and to the vocoders at the MTSO. Furthermore, system control processor **100** communicates with each cell-site control processor about the assignment of particular calls between the MTSO and cell-site, and the assignment of PN codes for the calls. It should be further understood that as illustrated in FIG. **4** digital switches **102** and **106** are illustrated as two separate switches, however, this function may be performed by a single physical switching unit.

When the cell-diversity mode is in use, the mobile unit will use the searcher receiver to find and trap the strongest multipath signal from each of the two cell-sites. The digital data receivers will be controlled by the searcher receiver and the control processor so as to demodulate the strongest signals. When the number of receivers is less than the number of cell-sites transmitting information in parallel, a switching diversity capability is possible. For example, with only a single data receiver and with two cell-sites transmitting, the searcher will monitor the pilots from both cell-sites and choose the strongest signal for the receiver to demodulate. In this embodiment the choice can be made as frequently as every vocoder frame, or about every 15 milliseconds.

The previous description of the preferred embodiments are provided to enable any person skilled in the art to make or use the present invention. Various modifications to these embodiments will be readily apparent to those skilled in the art, and the generic principles defined herein may be applied to other embodiments without the use of the inventive faculty. Thus, the present invention is not intended to be limited to the embodiment herein, but is to be accorded the widest scope consistent with the principles as novel features disclosed herein.

We claim:

1. A spread spectrum diversity receiver, comprising:

searcher means for, receiving multiple pilot signals each travelling upon a different propagation path and having a resultant time difference with respect to one another, determining signal strength of each received pilot signal and corresponding time relationship with respect to one another, and providing a searcher control signal indicative of received pilot signals of greatest signal strength and corresponding time relationship; and

data receiver means for receiving spread spectrum modulated information signals each corresponding to a different one of said pilot signals, said data receiver means responsive to said searcher control signal for demodulating one of said spread spectrum modulated information signals corresponding to one of said pilot signals of greatest signal strength and for providing an output signal bearing information.

2. The diversity receiver of claim **1** wherein said data receiver means is further responsive to said searcher control signal for demodulating at least one additional one of said spread spectrum modulated information signals each corresponding to a respective other one of said pilot signals of next to greatest signal strength, and providing corresponding additional output signals each bearing said information.

3. The diversity receiver of claim **2** further comprising combiner means for receiving and coherently combining said output signal and said additional output signals and for providing a corresponding combined output signal bearing said information.

4. The diversity receiver of claim **2** further comprising combiner means for receiving and combining said output signal and each of said additional output signal and providing a resultant combined output signal.

5. The diversity receiver of claim **4** wherein said combined output signal bears said information in an error correction coded format and further comprises decoder means for receiving and error correction decoding said combined output signal.

6. The diversity receiver of claim **1** wherein each one of said multiple pilot signals results form a single cell-site transmitted pilot signal travelling different propagation paths to reception by said searcher means, each one of said multiple pilot signals is of a same spreading code offset in time corresponding to its propagation path.

7. The diversity receiver of claim **1** wherein said multiple pilot signals result form different cell-sites each transmitting a single pilot signal spread spectrum modulated by a same spreading code with each cell-site transmitted single pilot signal travelling different propagation paths to reception by said searcher means, each cell-site transmitting its respective single pilot signal at a different code phase offset with respect to each other cell-site transmitted single pilot signal, ones of said multiple pilot signals resulting from a same cell-site transmitted single pilot signal being of a same spreading code offset in time corresponding to its propagation path.

8. In a cellular communication system in which user information signals are communicated to an intended recipient user by a cell-site using spread spectrum communication signals, wherein said cell-site transmits a spread spectrum pilot signal of a predetermined code phase, and wherein said cell-site transmitted spread